

CS2910 Paper Quiz 3 Name:

Consider the following reassembled TCP stream containing bytes from the server to the client in an SMTP connection. (The bytes from the client to the server are not shown.)

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00A0 35 2e 39 32 2e 37 32 2e 31 30 32 5d 0d 0a 32 35 5.92.72.102]..25
00B0 30 2d 53 49 5a 45 20 37 38 36 34 33 32 30 30 0d 0-SIZE 7 8643200.
00C0 0a 32 35 30 2d 50 49 50 45 4c 49 4e 49 4e 47 0d .250-PIP ELINING.
00D0 0a 32 35 30 2d 44 53 4e 0d 0a 32 35 30 2d 45 4e .250-DSN ..250-EN
00E0 48 41 4e 43 45 44 53 54 41 54 55 53 43 4f 44 45 HANCEDST ATUSCODE
00F0 53 0d 0a 32 35 30 2d 53 54 41 52 54 54 4c 53 0d S..250-S TARTTLS.
0100 0a 32 35 30 2d 38 42 49 54 4d 49 4d 45 0d 0a 32 .250-8BI TMIME..2
0110 35 30 2d 42 49 4e 41 52 59 4d 49 4d 45 0d 0a 32 50-BINAR YMIME..2
0120 35 30 20 43 48 55 4e 4b 49 4e 47 0d 0a 32 32 30 50 CHUNK ING..220
0130 20 32 2e 30 2e 30 20 53 4d 54 50 20 73 65 72 76 2.0.0 S MTP serv
0140 65 72 20 72 65 61 64 79 0d 0a 16 03 01 12 81 02 er ready .....
0150 00 00 51 03 01 54 48 f6 f9 12 1b ae f5 cd 9e 15 ..Q..TH. ....
0160 3e b0 69 6e d0 d8 4d 02 a2 7b a7 c6 55 8f b5 ce >.in..M. {...U...
0170 b4 50 2b b0 b5 20 ff 07 00 00 d2 76 4a b9 a4 be .P+.. .. ...vJ...
```

1. (3 points) The client sends the server the command EHLO [155.92.72.102]. The server starts its response at byte index 00AE. **Write** the **index** of the **last** byte of the server's response. **Explain** how the client would determine this byte is the last byte.
2. (1 point) The client then sends the server the command STARTTLS. The server's next response is in reply to this command. **Write** the **index** of the last byte of this response.
3. (1 point) **Write** the name of the protocol the server will use to interpret the non-ASCII bytes in the lines starting with indexes 0150, 0160, and 0170.
4. (1 point) In modern email usage, there are two servers between the sending and receiving clients. **Write** the name of the protocol these servers use to communicate.
5. (1 point) In modern email usage, **write** the name of a protocol that a client can use to send email to a server.
6. (1 point) In modern email usage, **write** the name of a protocol that a client can use to receive email from a server.
7. (2 points) **Describe** the difference between SMTP over SSL/TLS and SMTP with STARTTLS.